

invention. In an attempt to assert teaching for center-offset approach in the context of the presently-claimed invention, the Examiner refers (in the Response to Arguments) to column 3, lines 53-58 of the '987 reference for alleged teaching of a center-offset polishing process. However, upon review of this portion of the '987 reference, Applicant can find no discussion of a center-offset polishing process taught in the context of the instant invention. For example, page 3 of the instant application discusses center-offset conditions wherein portions of a wafer are polished at different rates. In addition, page 8, lines 1-6 of the instant application discusses an example application where a wafer carrier is aligned with only a portion thereof over the pad. The cited portions of the '987 reference, however, appear to only refer to an axis of rotation offset, which is common to such CMP applications and which does not teach or suggest the center-offset conditions and uses thereof to which the present invention is directed.

The '987 reference appears to be limited to CMP pad conditioning as a function of a general "removal rate" determination in order to sufficiently polish a pad (*see, e.g.,* the Abstract). The '987 reference does not appear to disclose positioning the wafer as a function of a center-offset condition and polishing the wafer. For instance, referring specifically to lines 53-58 of column 3 of the '987 reference, the discussion appears limited to a time period for polishing a wafer and does not discuss center-offset polishing in the context of the present invention. Moreover, the polishing referred to on lines 53-58 of column 3 occurs *prior* to making any measurements relevant to the uniformity of the wafer being polished (*see, e.g.,* column 4, lines 1-8 of the '987 reference). Therefore, since there had been no previous determination of the non-uniformity of the wafer polishing, the polishing referred to on lines 53-58 of column 3 cannot be performed as a function of such a determination as the Examiner asserts.

In addition, as stated in the previous Final Office Action Response, the Examiner failed to cite a portion of the '987 reference that teaches or suggests positioning the wafer carrier misaligned with respect to the pad as a function of the wafer being polished in a center-offset manner. In the Response to Arguments, the Examiner proffers that FIG. 3 of the '987 reference shows a wafer misaligned with respect to a pad. However, the Examiner failed to assert that the '987 reference teaches or suggests positioning the wafer carrier misaligned with the pad *as a function of the wafer being polished in a center-offset manner*, as claimed in the present invention. Upon review of the '987 reference, it appears that the cited misalignment is related to

typical CMP approaches wherein the wafer is not aligned with the pad. Such misalignment is not related to a center-offset condition as presently claimed (e.g., the positioning of the wafer in FIG. 3 does not appear relevant to any center-offset condition, nor does the specification of the '987 reference appear to teach such limitations). Therefore, the Examiner has failed to establish a *prima facie* Section 102(b) rejection, and Applicant requests that it be removed.

Applicant traverses the Section 103(a) rejections for the reasons stated above in connection with the Section 102(b) rejection because the rejections rely upon the '987 reference as the primary reference. A *prima facie* obviousness rejection under Section 103(a) requires that the Office Action provide teaching or suggestion of every element of the claimed invention. In this regard, the Section 103(a) rejection fails to cite references that teach or suggest every element of the instant invention. Therefore, the Examiner failed to establish a *prima facie* case of obviousness, and the Section 103(a) rejection should be removed.

Applicant further submits that the Section 103(a) rejections are improper because the Examiner failed to establish a *prima facie* case of obviousness in regard to the asserted teachings of either the '462 or '947 references. As discussed above, a *prima facie* obviousness rejection under Section 103(a) requires that the Office Action provide teaching or suggestion of every element of the claimed invention. In this instance, the Examiner failed to cite elements that teach or suggest various ones of the claimed limitations. For instance, regarding claim 5, the Examiner failed to cite a reference that teaches thinning the center of the pad. Regarding claim 7, the Examiner failed to cite a reference that teaches thinning the edge of the pad. Regarding claim 9, the Examiner failed to cite a reference that teaches thinning the pad in a location where the pad is thick, relative to the rest of the pad. Regarding claims 15 and 16, the Examiner failed to cite a reference that teaches supplying conditioning material in response to a detection arrangement adapted to detect whether a wafer is polishing in a center-offset manner. Therefore, Applicant submits that a *prima facie* case of obviousness has not been established and requests that the Section 103(a) rejection be removed.

The Section 103(a) rejections over the '987 reference in view of the '462 or the '947 references are also improper because the Examiner failed to cite any evidence of motivation for modifying the '987 reference. In this regard, Applicant submits that the Examiner is using the wrong test for establishing a Section 103(a) rejection. Specifically, in the Response to

Arguments on page 5 of the Final Office Action, the Examiner acknowledged the motivation requirement of a Section 103(a) rejection but failed to acknowledge that evidence of such motivation must be cited. As previously discussed in the Final Office Action Response filed on May 20, 2002, relevant case law indicates that such a Section 103(a) rejection must be supported by evidence of motivation found in the prior art (*see, e.g., In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999)).

In this instance, the Examiner's unsupported assertions that "the knowledge [is] generally available to one of ordinary skill in the art" are devoid of any evidence supporting the assertions, and therefore the rejections are improper. In specific regard to the Section 103(a) rejection of claims 5, 7 and 9, the Examiner made an unsupported assertion that it would have been obvious to arrange a conditioning wheel to "alter the thickness of a pad." Similarly, in specific regard to the Section 103(a) rejection of claims 14-16, the Examiner made an unsupported assertion that it would have been obvious to modify the '987 reference to include a supply "in order to provide a cleaning solution to condition a pad." In making the above unsupported assertions, the Examiner failed to provide any evidence as to why one skilled in the art would be motivated to either thin the pad of the '987 reference or to provide a cleaning solution to the pad in the manner as claimed in the present invention. Therefore, Applicant submits that the Examiner failed to cite evidence of motivation for making the asserted modifications of the '987 reference, and requests that the Section 103(a) rejections be removed.

In view of the above, Applicant believes that the rejections are improper and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at (651) 686-6633.

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